

van Lengerich - Serial No. 09/233,443

Amendment

an encapsulant that is at least one component selected from the group consisting of a pharmaceutical component, neutraceutical component, nutritional component, flavor component, fragrance component, and biologically active component; and

a hydrophobic agent for controlling the rate of release of the encapsulant, wherein said encapsulated product is in substantially non-expanded, particulate

form.

26. (Amended) An encapsulated product according to claim 21, wherein said encapsulant is at least one member selected from the group consisting of antioxidants, phytochemicals, hormones, vitamins, pro-vitamins, minerals, microorganisms, prebiotics, probiotics, trace elements, essential and/or highly unsaturated fatty acids, antibiotics, nutritional supplements, enzymes, formulations containing zidovudine, macromolecular polypeptides, aromatic nitro and nitroso compounds and their metabolites useful as anti-viral and anti tumor agents, HIV protease inhibitors, antibiotics, viruses, pigments, steroids, oligopeptides, dipeptides, amino acids, flavor components, fragrance components, detergents and surface-active components, lipid derivatives of phosphonatides, amphiphilic polymers, adenosine derivatives, sulfated tannins, monoclonal antibodies, and metal complexes of water-soluble texathyrin.

27. (Amended) An encapsulated product according to Claim 100, wherein said encapsulant is at least one member selected from the group consisting of amylases, proteases, lipases, pectinases, cellulases, hemicellulases, pentosanases, and phytases.

28. (Amended) A food composition comprising:
an encapsulated product according to Claim 21; and

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D3
cpt
a food product selected from the group consisting of ready-to-eat breakfast cereals, snacks, soups, salads, cakes, cookies, crackers, ice creams, yogurts, puddings, custards, baby foods, medicinal foods, sports bars, and beverages.

D4
29. (Amended) A food topping comprising an encapsulated product according to Claim 21 in granular form.

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D5
46. (Amended) An edible product for human or animal consumption comprising an encapsulated product, said encapsulated product being obtained by admixing (a) at least one plasticizable matrix material, (b) a liquid plasticizer, (c) an encapsulant, (d) a matrix component which is substantially non-plasticizable at temperatures lower than the decomposition temperature of the encapsulant, and (e) at least one component for controlling the rate of release of the encapsulant,

wherein the substantially non-plasticizable matrix component comprises an at least substantially non-gelatinized starch,

wherein said at least one plasticizable matrix material comprises at least one member selected from the group consisting of high gluten content flours, gluten from wheat, durum wheat, durum semolina, pregelatinized starch, pentosans, hydrocolloids, and mixtures thereof, and

wherein said encapsulant comprises at least one member selected from the group consisting of enzymes, vitamins, micronutrients, and live microorganisms.

D6
47. (Amended) An encapsulated product as claimed in claim 21 wherein the encapsulated product is obtained from a formable mixture which is extruded through a die

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*Die
cont* having multiple apertures, at a rate of extrudate per die area of less than about 5 kg/h per mm².

53. (Amended) An encapsulated product as claimed in claim 104, wherein said liquid encapsulant component comprises at least one enzyme.

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D* 54. (Amended) An encapsulated product as claimed in claim 21, wherein the amount of said at least one plasticized matrix material is at least about 30 % by weight based upon the weight of the encapsulated product.

55. (Amended) An encapsulated product as claimed in claim 104, wherein said at least one plasticizable matrix material is admixed with said liquid encapsulant component in solid form.

57. (Amended) An encapsulated product as claimed in claim 26, wherein the amount of said at least one plasticized matrix material is at least about 30 % by weight based upon the weight of the encapsulated product.

58 58. (Amended) An encapsulated product as claimed in claim 27, wherein the amount of said at least one plasticized matrix material is at least about 30 % by weight based upon the weight of the encapsulated product.

59 62. (Amended) An edible product as claimed in claim 46 wherein said at least one plasticizable matrix material comprises at least one member selected from the group

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consisting of high gluten content flours, gluten from wheat, durum flour, and durum semolina.

66. (Amended) An encapsulated product according to Claim 47 wherein said formable mixture is extruded by a single screw or twin screw extruder.

67. (Amended) An encapsulated product according to Claim 47 wherein said formable mixture is obtained by admixing ingredients in an extruder and the formable mixture is extruded from the extruder to obtain pieces.

81. (Amended) A method as claimed in claim 80, wherein the rate of extrudate per die area is less than 3 kg/h per mm².

82. (Amended) A method as claimed in claim 80, wherein the rate of extrudate per die area is less than about 0.5 kg/h per mm².

Please add new Claims 96-106 as follows:

96. (NEW) An encapsulated product according to Claim 21, wherein the hydrophobic agent is selected from the group consisting of fats, oils, waxes, fatty acids, and synthetic polymers.

97. (NEW) An encapsulated product according to Claim 21, wherein the hydrophobic agent comprises an oil.

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98. (NEW) An encapsulated product according to Claim 21, wherein the encapsulant comprises a probiotic.

99. (NEW) An encapsulated product according to Claim 21, wherein the encapsulant comprises live *lactobacilli*.

100. (NEW) An encapsulated product according to Claim 21, wherein the encapsulant comprises an enzyme.

101. (NEW) An encapsulated product according to Claim 21, wherein a liquid encapsulant component comprising the encapsulant and a liquid plasticizer provides at least a substantial portion of liquid plasticizer for plasticizing at least one plasticizable matrix material and the amount of hydrophobic agent is about 5% to about 70% by weight, based upon the weight of the at least one plasticizable matrix material.

102. (NEW) An encapsulated product according to Claim 101, comprising about 10% to about 35% by weight of the hydrophobic agent, based upon the weight of the at least one plasticizable matrix material.

103. (NEW) An encapsulated product according to Claim 21, wherein the durum ingredient selected from the group consisting of at least one of durum semolina, durum granular, durum flour, and mixtures thereof.

104. (NEW) An encapsulated product, comprising:
at least one plasticized matrix material comprising a biopolymer; and

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an encapsulant selected from the group consisting of live *lactobacilli*, a probiotic, a prebiotic, and an enzyme;

wherein a liquid encapsulant component comprising the encapsulant and a liquid plasticizer provides at least a substantial portion of liquid plasticizer for forming the at least one plasticized matrix material, and

wherein said encapsulated product is in a substantially non-expanded particulate form.

105. (NEW) An encapsulated product according to Claim 104, wherein the biopolymer comprises a carbohydrate. ✓

106. (NEW) An encapsulated product according to Claim 104, further comprising a hydrophobic agent for controlling the rate of release of the encapsulant.